it is respectfully submitted that no serious burden would be imposed upon the examiner in examining Groups III and IV with Groups I and II.

In view of the above remarks, withdrawal of the restriction requirement and examination of all of the pending claims is respectfully requested.

Rejection under 35 U.S.C. §112, second paragraph

Claim 12 is amended above to eliminate a typographical error. It is respectfully submitted that the language of claim 12 is sufficiently definite to one of ordinary skill in the art. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

Objection/Rejection under 35 U.S.C. §112, first paragraph

Contrary to the assertion in the rejection, applicants' original disclosure does provide sufficient descriptive support for species (e) recited in claim 2. See, for example, the disclosure at page 22, lines 1-2.

Withdrawal of the objection/rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

Rejections under 35 U.S.C. §103 and Obviousness-Type Double Patenting

Boettcher et al. (U.S. 5,242,925) has the same inventive entity as the instant application. U.S. '925 issued as a patent on September 7, 1993, less than 1 year prior to the German priority application of the instant application, P 43 33 254.4 (filed September 30, 1993). Enclosed herewith is a certified translation of German application '254.4. Submission of the English translation of the priority document perfects applicants' claim of priority and thus the effective U.S. filing date of the instant application is September 30, 1993.

In light of applicants' perfection of their claim of priority and the fact that U.S. '925 is not a disclosure "by another," U.S. '925 is not an effective prior art reference against appli-

cants' claimed invention. Withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

In any event, U.S. '925 discloses a genus of piperazinyl-benzodioxane compounds. These compounds are described as being active on the central nervous system and serotonin agonists and antagonists. The 1,4-benzodioxane derivatives of U.S. '925 do not anticipate or render obvious applicants' claimed genus of compounds. Compare, for example, the description of R^1 with the 1,4-benzodioxane radical of the compounds of U.S. '925.

Perregaard et al. (U.S. 5,002,948) discloses a genus of indoles, indazoles, 2-indolones and 2,3-dihydro derivatives thereof. In the abstract, U.S. '948 indicates that the compounds have central serotonin activity. The piperazinyl compounds are substituted in the para position by the group Ar which can be a substituted phenyl ring or a phenyl ring fused with the structure $-Y-(CH_2)_{1-3}-Z-$. See column 1, lines 40-50. In this fused ring structure, Y is O or S and Z is O, S or CH_2.

This description of the fused ring structure for group Ar does not include benzofuranyl radicals, chroman-4-one radicals, chromene radicals or chromen-4-one radicals. Furthermore, the description of Ar does not include 2,3-dihydrobenzofuran-5-yl, chroman-6-yl or even 1,4-benzodioxan-6-yl radicals.

As can be seen from the description of Ar at column 1, lines 40-50, the point of attachment between this group and the piperazine structure is in the ortho position to Y. Thus, when Y is O, Z is O and subscript n is 2, the resultant fused structure is 1,4-benzodioxan-5-yl, not 1,4-benzodioxan-6-yl. See, for example, the list of preferred Ar groups at column 2, lines 9-11. Thus, U.S. '948 does not disclose the same benzodioxane radical as U.S. '925. Hence, Perregaard et al. do not suggest interchangeability of other radicals for the 1,4-benzodioxan-6-yl radical of the compounds of Boettcher et al.

Even if one of ordinary skill in the art were to modify the compounds of U.S. '925 based on the fused Ar groups of U.S. '948, the resultant modification would still not result in a compound in accordance with applicants' claimed genus. Attention is again

directed to the attachment of the Ar group to the piperazine structure at the ortho position relative to the group Y.

In addition, U.S. '948 specifically defines only Z to possibly by CH_2, not both Y and Z. Even if one were to modify Y to be CH_2 when Z is O and subscript n is 1, the resultant dihydrobenzofuranyl radical would be 2,3-dihydro-4-benzofuranyl and, thus, still would not suggest a compound of applicants' claimed genus.

Further, referring to the specific compounds disclosed by U.S. '948, the only fused Ar substituents exhibited by these compounds are 2,3-dihydro-7-benzofuranyl and 1,4-benzodioxan-5-yl. See, for example, the compounds disclosed at column 7, lines 4-11.

In view of the above, it is respectfully submitted that no suggestion or motivation is provided by the disclosure or the claims of U.S. '948 that would lead one of ordinary skill in the art to modify the compounds of U.S. '925 in such a manner as to arrive at a compound in accordance with applicants' claimed genus. Withdrawal of the obviousness-type double-patenting rejection and the rejection under 35 U.S.C. §103 is respectfully requested.

Improper Markush Rejection

The classical test for an improper Markush group is set forth by the C.C.P.A. in In re Harnisch, 206 U.S.P.Q. 300 (C.C.P.A. 1980). If the compounds of the claimed genus possess a common utility and the grouping of the compounds together in a genus is not repugnant to scientific classification, then a Markush group is proper.

In Harnisch, the claimed genus of compounds were coumarin compounds which were dyes and thus shared at least one common utility. The court also found that the genus of coumarin compounds was not repugnant to scientific classification.

The coumarin base structure exhibited a substituent NZ^1Z^2 in which Z^1 and Z^2 could each be hydrogen, alkyl or cycloalkyl. Z^1 could also be aralkyl or aryl. Further, Z^1 could be a 2- or 3-membered alkylene radical connecting to the 6-position of the

coumarin ring and Z^2 could be a 2- or 3-membered alkylene radical connected to the 8-position of the coumarin ring. Furthermore, Z^1 and Z^2 could, together with the nitrogen atom, be an optionally benz-fused heterocyclic ring.

Thus, the NZ^1Z^2 group could either be an amino substituent, a further ring group fused with a coumarin base structure and possessing a nitrogen atom or it could be a nitrogen atom-containing cyclic substituent. Although all of these various structures were included, the court found the genus to not be repugnant to scientific classification.

The variation in the compounds in the Harnisch case is even greater than the variation between Groups I and II of the restriction requirement. The difference between Groups I and II of the restriction requirement is whether the cyclic structure containing group Z is a piperidine or piperazine, i.e., whether the cyclic structure contains one or two nitrogen atoms. In comparison, the NZ^1Z^2 structure in the Harnisch case could have represented no cyclic structure whatsoever, a fused cyclic structure, or a cyclic substituent.

In view of the above, it is respectfully submitted that the grouping of the compounds of Groups I and II identified in the restriction requirement in a genus is not repugnant to scientific classification. Furthermore, the compounds share at least one common utility, e.g., active on the central nervous system.

In view of the above, withdrawal of the improper Markush rejection is respectfully requested.

Respectfully submitted,

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